Exercise 1 *Using data from Bureau of Transportation Statistics, the average fuel economy F in miles per gallon for passenger cars in the US can be modeled by $F(t) = -0.0076t^2 + 0.45t + 16$, for $0 \leq t \leq 28$, where t is the number of years since 1980.*

(a) *Compute $AV_{[0,28]}$.*

$AV_{[0,28]} = \boxed{0.2372}$.

(b) *In this context, $AV_{[0,28]}$ represents*

Multiple Choice:

(i) *the average fuel economy for passenger cars in the US from 1980 to 2008.*

(ii) *the average price of fuel in the US from 1980 to 2008.*

(iii) *the average rate of change of the average fuel economy for passenger cars in the US from 1980 to 2008.* ✓

(c) *The units of $AV_{[0,28]}$ are*

Multiple Choice:

(i) *miles.*

(ii) *miles per gallon.*

(iii) *miles per gallon per year.* ✓

(iv) *miles per year.*